

CLAIMS

1-174. (Canceled)

175. (Currently Amended) A method of handling communication in a multi-player contest using multiple game servers to handle communication with all client machines in a contest-promoting system, said method comprising:

- (a) using a client machine to initially connect to the contest-promoting system through a login server located at a known Internet address, said client machine including a global synchronization unit;
- (b) using login server to choose which game server should be utilized by this contestant's client machine, said choice being based on a variety of information, including the location of the client machine, the characteristics of the connection to the client machine, and the number and characteristics of the connections already assigned, or anticipated to be assigned, to the game servers in the system, wherein said game server includes a memory storage device and an owner registration server resident in said memory storage device, wherein said game server further includes a device trajectory monitoring server operably connected to the infrastructure of the Internet, said device trajectory monitoring server configured for web access for owners to monitor said client machines through time and space coordinates;
- (c) using load balancing algorithms to distribute the connections to the game servers, thereby minimizing the possibility of overwhelming any one server, and insuring consistent connections for all the game clients;

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(d) using a first subsystem for transmitting an Invitation-to-Respond to each of the game clients participating in the multi-player contest;

(e) using a second subsystem for responding to each ITR presented to the game clients, by submitting an appropriate response or undertaking a particular action; wherein the plurality of the game clients are simultaneously presented with the same set of data, and further wherein each the game clients' response is time stamped and space stamped to ensure fairness in the competitive activity, wherein said time stamp provides an absolute time reference regardless of network latency of said client machine and wherein said space stamp provides an absolute spatial reference for said client machine.

176. (Original) The method of claim 175, wherein all said client machines receive their game server assignments from a single login server.

177. (Original) The method of claim 175, wherein each client machine is running the contest client software for interfacing said client machine with said game server by logging in through said login server.

178. (Original) The method of claim 175, wherein said the login server accesses the contestant database to check passwords and the status of the contestant.

179. (Currently Amended) A method of enabling a contestant to compete against many other contestants, in a secure and fundamentally fair time-constrained contest, over the

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Internet, wherein each contestant is provided with a common "start-time" regardless of the location of his or her client machine on the infrastructure of the Internet, for the type of interconnection provided thereto, said method comprising the steps of:

- (a) registering each user as a contestant using a web browser;
- (b) creating a globally-synchronized and secure networked client machine through which the contestant may participate in a timed-constrained question and answer type contest, while competing against large numbers of other contestants for potentially high stakes, said client machine including a global synchronization unit;
- (c) using the contest client software on the client machine to log on to a game server, said game server having a memory storage device and an owner registration server resident in said memory storage device, and to establish a communication channel therewith, wherein said game server further includes a device trajectory monitoring server operably connected to the infrastructure of the Internet, said device trajectory monitoring server configured for web access for owners to monitor said client machines through time and space coordinates;
- (d) transmitting the query and start-time from the primary server to the client machine;
- (e) characterizing the client machine's local clock with the master clock on the primary server, and synchronizing of the client machine display update cycle with the desired start-time for the contest;
- (f) presenting the query to the contestant precisely at the start-time, as determined by a local clock that is characterized with respect to a global master clock located on the primary server;

(g) accepting the contestants response, attaching a time-stamp and a space stamp to that response, and transmitting the response and time-stamp and space stamp to the servers, wherein said time stamp provides an absolute time reference regardless of network latency of said client machine and wherein said space stamp provides an absolute spatial reference for said client machine;

(h) judging the responses from all the contestants and determining the winner.

180. (Original) The method of claim 179, wherein said method further comprises

(i) determining each contestant's standing or rank for the contest.

181. (Original) The method of claim 179, wherein step (a) comprises browsing a contest WWW site ("the contest web site") containing information about the contest, including descriptions of the contest client software, contestant qualifications, contest regulations, instructions on how to play, information about different varieties of the contest, lists of prizes and awards offered, advertising, lists of contest sponsors, lists of previous winners, and the standings or ranks of other contestants.

182. (Original) The method of claim 179, wherein step (a) comprises a flow of information between the user's client machine and the web server containing HTML (and/or XML) encoded documents comprising the contest web site.

183. (Original) The method of claim 179, wherein step (a) comprises the user registering to become a contestant involving the user filling out an on-line registration

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form, using either standard HTML (or XML) forms, or forms generated by Java or Active-X applets, or by a CGI script in a manner well known in the art.

184. (Original) The method of claim 179, wherein step (a) comprises the user performing a test either of their own abilities and/or of the capabilities of their computing system, said tests being administered through forms along with the registration process, or could involve the user downloading and running customized plug-in modules or stand-alone applications on his or computing system.

185. (Original) The method of claim 179, wherein step (a) further comprises:

 said web server creating a record in the contestant database for this user upon completing receipt of the registration information therefrom;

 storing the registration information in this record;

 establishing the user as a contestant permitted to participate in one or more on-line multi-player contests to be promoted (i.e. enabled) the system of the present invention;

 assigning a contestant ED to the new contestant, said ID code uniquely identifying the contestant for all time, unlike a username, password, e-mail address or other information that may be changed in the future by this player/contestant;

 recording the contestant ID in the contestant database, and using the same internally by the contest software of the system,

 assigning the contestant a username and a temporary password for use when playing the contest, said username being assigned by the system, or being chosen by the

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user as a part of the registration procedure, said password being generated randomly, and said username and password being stored in the contestant database;

sending an e-mail message containing the username and temporary password to the contestant;

logging said contestant onto a secure, members-only area of the contest web-site using his or her username and temporary password, said area allowing the contestant to view and update his or her personal information (e.g. username, password, e-mail address, residence address and telephone numbers, and so on);

downloading the contest software from the web server to his or her client machine, i.e. from the members-only area of the contest web site, said contest software being download using HTTP, FTP, or other file transfer protocol;

installing the client contest software on client machine, said installation installing contest client application, as well as one or more customized device drivers required by the contestant's client machine, said device drivers being used to communicate directly with the local clock and any timing hardware (GPS, etc) used in the client machine,

thereby enabled the client machine for participation in a contained competition

186. (Canceled)

187. (Canceled)

188. (Canceled)

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189. (Canceled)

190. (Canceled)

191. (Currently Amended) A method of downloading an encrypted query and start-time to the client machine comprising the steps of:

- (a) human operators entering the questions and associated answers relating to a particular contest into the query/answer database;
- (b) at some point before the contest begins, the game server sends to a primary server, a message containing its public encryption key, said primary server having a memory storage device and an owner registration server resident in said memory storage device, wherein said game server further includes a device trajectory monitoring server operably connected to the infrastructure of the Internet, said device trajectory monitoring server configured for web access for owners to monitor said client machines through time and space coordinates;
- (c) primary server sends to the game server, a message containing its public encryption key;
- (d) when a particular contest is created, accessing the system through the contest management interface, and selecting queries from the database to be used in the contest;
- (e) for each query, assigning a desired start-time;
- (f) for each query and start-time, the primary server generates a unique set of query encryption and decryption keys;

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- (g) using the query encryption key, the primary server encrypts the query;
- (h) the primary server creates a message containing the encrypted query, the query decryption key, and the desired start-time;
- (i) the entire message is encrypted using the game server's public encryption key;
- (j) entire message is sent from the primary server to the game server;
- (k) upon receiving the message from the primary server, the game server decrypts the message and creates a new message, and the new message is encrypted by the game server using the client machine's public key;
- (l) the resulting encrypted message is sent to the client machine;
- (m) the client machine decrypts the message, and stores the encrypted query contained within, along with the start-time on the client machine;
- (n) the client machine creates and begins appending data to a security verification log file, and the resulting encrypted file will contain a variety of information about the timing of the query/response process, said security verification log including time and space stamp of said client machine from a global synchronization unit, wherein said time stamp provides an absolute time reference regardless of the network latency of said client machine and wherein said space stamp provides an absolute spatial reference for said client machine;
- (o) the security verification log recording the arrival-time (in local time) of the encrypted query from the game server.